

Attachment P

"The Regional Sample Control Center Guidance for the
Contract Laboratory Program (CLP) and Delivery of
Analytical Services (DAS) Program for EPA-New England",
November 1996

The Regional Sample Control Center (RSCC) Guidance
for the Contract Laboratory Program (CLP) and
Delivery of Analytical Services (DAS) program for
EPA-New England

November 1996
RSCCGuid-01

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I. Introduction

A. Contract Laboratory Program (CLP) Background

The Superfund Contract Laboratory Program (CLP) was established in 1980 in response to the increased analytical needs created by the passage of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). It is a national program that consists of laboratories throughout the country which support the Environmental Protection Agency's (EPA) Superfund analytical needs. It provides cost effective data of known quality to be used in environmental decision making and in supporting Agency enforcement actions.

Prior to June 30, 1994 the CLP provided both Routine Analytical Services (RAS) through inorganic and organic Statements of Work (SOWs) and Special Analytical Services (SAS) through analytical subcontracts procured by the Sample Management Office Contract. Presently, the CLP provides organic and inorganic analytical services within the Routine Analytical Services program.

B. Delivery of Analytical Services (DAS) Background

As per the Superfund 90-Day Study, the Office of Emergency and Remedial Response (OERR) established a Delivery of Analytical Services (DAS) Task Force in April of 1991 to develop a Superfund long-term strategy for the delivery of analytical services. The final strategy decision for the delivery of special analytical services, which was made by the Deputy Assistant Administrator for the Office of Solid Waste and Emergency Response, was that special analytical services should be regionalized. This decision was transmitted to the Regions in a memorandum dated 01/27/93 from Henry Longest II, Director of the OERR. Thus, the ability to ship samples under the CLP Special Analytical Services (SAS) program, which had previously handled all the samples which could not be processed with the RAS program, ended June 30, 1994.

A Region I EPA DAS Workgroup formed in March 1993 to determine the best mechanism for obtaining special analytical services. The workgroup evaluated vehicles for obtaining these analytical services.

Given the high sample volumes, cost and the complexity of the analytical needs, EPA-New England decided on a two-phased implementation plan to obtain future Superfund special analytical services. EPA-New England's short-term approach was to direct the EPA field contractors to procure/obtain special analytical services for those sites that they worked on, either by subcontracting the analytical services or utilizing in-house corporate laboratory facilities. The long-term solution would be the procurement of a Regional Environmental Analyses Procurement (REAP) for special analytical services. EPA New-England will continue to use the national CLP RAS services whenever the analytical SOWs meet the project data quality objectives (DQOs).

C. Overview of the Contract Laboratory Program (CLP) Operations

The Contract Laboratory Program (CLP) is administered by a headquarters Administrative Project Officer (APO) with Technical Project Officer (TPO) support in the regions. The Technical Project Officer oversees the contract compliance of the laboratories in their region which have contracts under the CLP and is the first line of contact for the laboratory for resolution of all technical problems.

All CLP samples collected by EPA personnel, EPA contractors, States under Cooperative Agreements and other Federal Agencies under Interagency Agreements are tracked by the RSCC.

The Regional Sample Coordinator (RSC) places all Regional requests for CLP analyses. The requests are submitted to DynCorp Information & Engineering Technology, under the Contract Laboratory Analytical Services Support (CLASS) contract.

Analytical requests are processed one week prior to the anticipated sampling date. The specifics for obtaining CLP analyses are located in detail in the following sections of

this document. The status of the field samples from the date of collection, submission to a laboratory, receipt of data and completion of data validation are tracked by the New England Sample Tracking System (NESTS) database maintained by the RSCC. Routinely, reports containing the tracking information are provided to the Lead Chemists. These reports are provided at various intervals from weekly to quarterly. See Section B, Activities, part 12 for a description of the reports.

Standardized sample identification paperwork, including sample labels, tags and Traffic Reports, are required for all CLP sampling. Accurate completion of standardized forms ensures that sample authenticity and sample custody are maintained.

D. Overview of Delivery of Analytical Services (DAS) Activities

Delivery of Analytical Services (DAS) activities refer to all EPA sampling activities or EPA contracted sampling activities for Superfund not analyzed through the CLP. DAS samples collected by EPA personnel and EPA contractors and submitted to either the U.S. EPA NERL, contracted laboratories or corporate laboratories are tracked by the RSCC. DAS samples collected under Interagency Agreements or Cooperative Agreements by States are not tracked by the RSCC.

The DAS analytical specification must ensure that the project data quality objectives (DQOs) for the sampling event are achieved. The organization procuring analytical services for the EPA is responsible for ensuring that usable data are delivered. To that end, the field contractor, State or other Federal Agency should review laboratory quality assurance plans, SOPs and other documentation outlining laboratory policies and procedures. In addition, technical systems audits, including on-site laboratory audits should be performed to monitor compliance with contract specifications. Performance Evaluation Samples (PESs) should also be analyzed by contracted laboratories to monitor performance prior to and/or during field sample analysis. The status of the field samples which includes the date of collection, submission to a laboratory, receipt of data and completion of data validation are tracked with the RSCC database. The field sampling contractor provides

this information to the EPA RSC with the chain-of-custody form, the DAS Summary Form and DAS Data Receipt Notification form. Routinely, reports containing the tracking information are provided to the field sampling contractors. These reports are provided at various intervals from weekly to quarterly. See Section B, Activities, part 12 for a description of the reports.

II. Analytical Services Available

The Contract Laboratory Program (CLP) Routine Analytical Services (RAS) include Organic and Inorganic analyses for single-phase aqueous and soil/sediment samples.

A. Organic Routine Analytical Services (RAS)

The CLP Organic contracts are operating under the OLM03.1, or more recent version, of the USEPA Contract Laboratory Program Statement of Work for Organic Analysis. A copy of the SOW, Exhibit C, which has the analyte list and contract required quantitation limits is provided in Attachment I.

The SOW includes the analysis of soil and aqueous samples for volatile, semivolatile and pesticide/PCBs compounds. Analysis techniques include gas chromatography/mass spectrometer (GC/MS) and gas chromatography/electron capture detector (GC/ECD) procedures.

B. Inorganic Routine Analytical Services (RAS)

The CLP Inorganic contracts are working under the ILM04.0, or more recent version, of the USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis. A copy of the SOW, Exhibit C, which has the analyte list and contract required detection limits is provided in Attachment I. The SOW includes the analysis of soil and aqueous samples for metals, including cyanide and mercury. Analysis techniques include atomic absorption and inductively coupled plasma procedures.

C. Delivery of Analytical Services (DAS)

The Delivery of Analytical Services (DAS) program consists of primarily one method of laboratory procurement. The field sampling contractors procure analytical services in accordance with the "Region I ARCS Delivery of Analytical Services Pilot Program, Final Report Volume II. Appendices", 15 March 1994, or as otherwise directed by the EPA contract Project Officer.

III. Regional Sample Control Center (RSCC)

A. Overview

The Region I Sample Control Coordinator is:

Christine Clark
U.S. EPA, OEME
60 Westview St.
Lexington, MA 02173
(617)860-4615
Fax No. (617)860-4397

Each Region has established a RSCC to centralize scheduling of CLP sample analyses. The RSC routinely places all Regional requests for CLP analyses, coordinates with the Contract Laboratory Analytical Services Support (CLASS)

contractor during sampling and sample shipment, and assists with resolving any problems/issues concerning the samples. The RSC is the point of contact for questions from sampling contractors and CLASS concerning Regional sampling efforts.

B. Activities

1. Quarterly CLP and DAS Sampling Projections

Prior to the beginning of each calendar quarter, CLASS requires quarterly projections from the Region. The RSC sends a letter requesting Quarterly Projections to all the potential regional samplers. The projections include Routine Analytical Services (RAS) samples and Delivery of Analytical Services (DAS) samples. These are broken down by analysis/matrix/month and summarized for the quarter.

The First Quarter of the fiscal year is October, November and December, Second Quarter is January, February and March, Third Quarter is April, May and June and Fourth Quarter is July, August and September.

The EPA RSCC sends a letter with the blank request form in accordance with the following schedule, see Attachment II:

First Quarter	Request is mailed to sampler during the first week of July.
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Second Quarter	Request is mailed to sampler during the first week of October.
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Third Quarter	Request is mailed to sampler during the first week of January.
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Fourth Quarter	Request is mailed to sampler during the first week of April.
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2. Weekly Scheduling of RAS Analysis

A sampling event is defined as "scheduled sampling at one site for a designated period of time".

To obtain RAS sample slots, the field sampling contractors must contact the RSCC as soon as it has been determined that samples will be analyzed through the CLP. Requests must be

submitted no later than close of business, the Tuesday prior to the sampling date.

Requests submitted to the RSCC after the deadline of Tuesday, close of business, prior to the week of sampling are transmitted to CLASS as late requests. Whenever possible, CLASS will accommodate late analysis requests; however, these assignments are not guaranteed.

The RAS analysis requests must be submitted by facsimile on the "Region I Weekly RAS Request Form" provided as Attachment III. **The project "EPA-NE-DQO Summary Form" located in Attachment J of "Part I", Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses must be provided with the request.** Receipt of the transmittal by the RSCC must be confirmed with telephone communication initiated by the requestor.

The Region I Weekly RAS Request Form must contain the following information:

1. Site Name (from the National Priority List)
2. Location (Town, State)
3. The Contract the work is requested under
4. Analysis Turnaround Time Required
5. CERCLIS #
6. Purpose Code (Located on the Traffic Report form.)
7. Site Spill ID# with Operable Unit (A six digit code which begins with 01, for Region 1.)
8. Action Code (A two digit code from the project Work Assignment.)
9. Matrix
10. Number of Samples
11. Analysis/Parameter Code
12. Initials of the Contractor making request.

Note: The terms Analysis/Parameter Code and Analytical Method are used interchangeably in this document.

RAS laboratory requests are for one week, if more than one week requests are needed, the Region I CLP TPO must be contacted. Authorization must be obtained by Wednesday at

3:00 p.m. two weeks prior to sampling. The TPO may be contacted at (617) 860-4379. The CLP TPO notifies the RSC of authorization approval. The RSC will not submit a request for two week assignments without TPO authorization. A two week request indicates sampling during both weeks, not just the second week.

Routine data package turnaround time is 35 days from the last sample/per SDG submitted for analysis. Fast turnaround time 14 day contracts may be requested for both Inorganic and Organic samples. However, 14 day turnaround must be requested at the time of RSCC notification of sampling event and written on the "Regional Weekly RAS Request Form". The RSC contacts the requesters by COB the Friday following the initiation of a request with the laboratory assignment and case number.

3. Notification of DAS Events

The Region I field sampling contractors' responsibilities for DAS events include informing the RSC of the sampling information by using the "Region I Weekly DAS Summary Form" provided as Attachment III. The DAS notification must be submitted within seven working days of DAS sample shipment. **The project "EPA-NE-DQO Summary Form" located in Attachment J of "Part I", Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, must be provided with the request.** DAS notification includes the same information as for RAS analyses.

Notification includes:

1. Site Name (from the National Priority List)
2. Location (Town and State)
3. The Contract the work is requested under
4. Data Package Turn Around Time (Date samples shipped and date data package due.)
5. CERCLIS #
6. Purpose Code (Located on the Traffic Report Form.)
7. Site Spill ID# with Operable Unit (A six digit code which begins with 01, for Region 1.)
8. Action Code (A two digit code from the project Work Assignment.)

9. Matrix
10. Number of Samples
11. Analysis/Parameter Code
12. Initials of the Contractor making request.
13. DAS Case Number
14. Laboratory Code (Standardized by the Field Sampling Contractor with the full reference provided.)

Note: The terms Analysis/Parameter Code and Analytical Method are used interchangeably in this document.

4. Making Changes to CLP Analytical Requests

The RSC must be notified of all changes to sample shipments. Changes include the number of samples shipped, a change in the date of sample shipment, a change in the analysis requested, cancelling and the reason for cancelling or postponing a sampling event, etc. An extension for sample shipment may be requested but, it is not

guaranteed that the same laboratory will be available. If the laboratory is not available the case will be closed. The sampler must send a new RAS Request Form to the RSCC again by close of business, the Tuesday before the week of sampling, and a new case number and laboratory will be assigned.

5. Sample Documentation

Within 7 working days of sample shipment, the CLP clients must provide copies of RAS sampling documentation to the RSC. See Attachment IV.

The RAS sampling documentation includes a copy of sample Traffic Reports/Chain-of-Custody forms identifying sample numbers, and the QA/QC samples.

The DAS sampling documents include "Region I Weekly DAS Summary Form" and chain of custody documentation must be submitted to the RSC within 7 working days of DAS sample shipment. The documents must provide field and laboratory sample numbers, identify the QA/QC samples, provide the analytical method, the number of samples and matrix.

The original Traffic Reports/Chain-of-Custody forms must not be sent to the RSCC. If original Traffic Reports/Chain-of-Custody forms are received by the RSCC, a copy of the paperwork is generated and filed with the case file. The original documents are returned to the CLP or DAS client to be included with the final data package.

6. Receipt of CLP RAS Data & DAS Data Receipt Notification

Upon receipt of a CLP laboratory data package the RSC date stamps the first page of the data package and initiates a "Complete SDG File Receipt/Transfer Form", Attachment V.

The CLP data package is then identified in the NESTS database. The EPA site name, NESTS data package number, the CLP client name with the contract are recorded on the first page of the data packages.

The data package is sent within 24 hours of its receipt to the CLP client who performed the sampling for validation purposes.

The RSC is notified of DAS data receipt with the "DAS Data Receipt Notification Form" from the field sampling contractor, see Attachment VI. The form must be completed and sent to the RSC via facsimile within one day of data package receipt.

Note: If data packages for Dioxin/Furan analysis are received by the field sampling contractor, forward the data within 24 hours to the RSC. The RSC will submit the data for validation. OEME performs data validation on all Region I Dioxin/Furan data.

7. CLP Contract Compliance Screening (CCS) & Laboratory Response to CCS

CLASS checks laboratory data packages for compliance with CLP contract requirements. CLASS completes the Contract

Compliance Screening (CCS) Reports. A copy of the CCS Report is sent to the laboratory and another copy is sent to the Region. The Regional CCS copy is sent to the CLP client. The CCS Reports must be included with the laboratory data package in the CLP client's project files.

The RSC receives copies of the laboratory's response to CCS reports. The responses are forwarded to the CLP clients to be included with the laboratory data package in the CLP client's project files.

8. Data Validation Reports and Tier I Validation Cover Letters

Refer to Sections 10.0 through 14.0 of the Data Validation Manual, Part I of Region I, EPA-NE Data Validation Functional Guidelines for Evaluation of Environmental Analyses, for format and distribution of Data Validation Reports and Tier I Validation Cover Letters.

9. Notification to CLASS for Sample Shipment

All RAS shipment information must be reported to the Region I CLASS Coordinator, Neil Rogers. The sampler must telephone Neil Rogers at (703)519-1019 or by facsimile at (703)519-8626 by 5:00 p.m. on the day of shipment.

CLASS must be notified for shipments placed on Friday for Saturday delivery no later than 3:00 p.m. on Friday. If CLASS is not notified by 3:00 p.m. on Friday it is considered a late notification and receipt by the laboratory is not be guaranteed.

The required shipment information includes:

1. Case Number
2. Date of telephone message or facsimile
3. Shipper - Region I
4. Lab receiving samples
5. Number of samples and analysis

6. Matrix and concentration of samples shipped
7. Date of shipment
8. Expected date of delivery
9. Courier/Airbill numbers
10. Identify whether or not shipping is complete
11. Special comments

10. Distribution of CLP Sampling Documentation

The RSCC manages the distribution of CLP and regional sampling documentation to Region I CLP clients.

On an as-needed basis, CLP clients telephone the RSCC to request CLP sample Sample Tags, Custody Seals, Inorganic and Organic Traffic Reports/Chain-of-Custody forms and Inorganic, Organic Labels, see Attachment IV. The CLP clients must call one week in advance of requiring supplies.

11. Problem Resolution and Information Services

The RSC assists both CLASS and CLP clients when questions and/or problems arise regarding laboratory or field activities.

When sampling problems occur and/or samples are not shipped as scheduled, CLP clients must notify the RSC with the reason for the change by telephone as soon as a change or problem has been identified. The RSC documents this information in a telephone logbook and communicates the changes to CLASS.

If laboratories encounter problems during sample receipt or analysis, the laboratory contacts CLASS, who then contacts the RSC to discuss the problem resolution. If appropriate, the RSC will contact the affected CLP client to resolve the situation. The field samplers cannot contact the laboratory until data have been received.

CLP client questions concerning sample shipment, sample analysis, laboratory contacts, the status of data deliverables, and final data packages are relayed to the RSC. The RSC is the regional information center for incoming telephone calls, correspondence, and other inquiries regarding CLP operations for EPA New England.

CLP clients should contact the National Technical Information Service (NTIS) in Springfield, Virginia 22161, Telephone (703)487-4650 or 1-800-553-NTIS, Facimile: (703)321-8547 or (703)321-9038, directly for CLP Statements of Work.

12. Reports Provided by the RSCC to the Lead Chemists

The RSC provides reports to the Lead Chemist for each EPA field sampling contractor. The Lead Chemist is responsible for confirming that the information is accurate and/or updating the information for the RSCC within seven days of receipt. These reports must contain complete and accurate data records.

Routine Analytical Services (RAS) Reports:

1. RAS Outstanding Analysis Status Report - Monthly

The RAS Outstanding Analysis Status Report identifies Region I CLP samples which were shipped to CLP laboratories for analysis. This report is generated monthly.

The Lead Chemist verifies that this report identifies all the samples they have shipped and that the ship date, laboratory, Case number, number of samples, contractor/contract and due date correlate with his/her records.

If there are discrepancies between the Lead Chemist's records and the report, then the Lead Chemist must provide updated information to the RSC within seven days of report receipt.

If samples have been identified as outstanding, at the laboratory for longer than the turnaround time, then the Lead Chemist must telephone the RSC within three days of report receipt to identify the late data by Case Number, SDG and laboratory. The RSC will ascertain a delivery date.

2. RAS Outstanding Data Validation Memoranda Status Report - Monthly

The RAS Outstanding Data Validation Memoranda Status Report is a summary of Region I CLP cases which have been in data review for more than 21 days. This report is generated monthly.

The lead chemist verifies that this report identifies all the cases which are presently in data validation and that the Case number, contractor/contract, laboratory, number of samples and the data package received date correlate with his/her records.

If there are discrepancies between the Lead Chemist's records and the report, then the Lead Chemist must provide updated information to the RSC, within seven days of report receipt.

If CLP cases have been identified which have been in data review for more than 21 days, then the Lead Chemist must provide to the RSC, within seven working days of report receipt, a letter which identifies by Case Number, SDG, and laboratory the Outstanding Data Validation Memoranda with the scheduled date by which validation will be complete.

DAS Activities Status Reports:

1. DAS Outstanding Analysis Status Report - Weekly

The DAS Outstanding Analysis Report identifies DAS samples which were shipped to DAS laboratories for analysis. This report is generated weekly.

The Lead Chemist verifies that this report identifies all the samples that they have shipped and that the ship date, laboratory, Case number, number of samples, contractor/contract and due date correlate with his/her records.

If there are discrepancies between the Lead Chemist's records and the report, then the Lead Chemist must provide updated information to the RSC within seven days of report receipt.

If samples have been identified as outstanding, at the laboratory for longer than the turnaround time, then the Lead Chemist must pursue obtaining the data. The

Lead Chemist must provide to the RSC a letter which identifies the late data by Case Number, SDG and laboratory. The Lead Chemist must provide within seven working days the date that the data are anticipated or received.

2. DAS Outstanding Data Validation Memoranda Status Report - Monthly

The DAS Outstanding Data Validation Memoranda Status Report is a summary of DAS cases which have been in data review for more than 21 days. This report is generated monthly.

The Lead Chemist verifies that this report identifies all the cases which are presently in data validation and that the Case Number, contractor/contract, laboratory, number of samples and the data package received date correlate with his/her records.

If there are discrepancies between the Lead Chemist's records and the report, then the Lead Chemist must provide updated information to the RSC, within seven working days of report receipt.

If Cases have been identified which have been in data review for more than 21 days the Lead Chemist must provide to the RSC, within seven working days of report receipt, a letter which identifies by Case Number, SDG, and laboratory the Outstanding Data Validation Memoranda with the scheduled date by which validation will be complete.

3. Summary of All Data Packages Report - Quarterly

The Summary of All Data Packages Report identifies the overall status of each DAS Case Number and SDG number. This report is generated quarterly.

The Lead Chemist verifies that this report identifies all of DAS activities for the quarter, showing late data/late validation trends, as well as data packages and/or validation reports which have not been received by the RSC.

If there are discrepancies between the Lead Chemist's records and the report, then the Lead Chemist must provide updated information to the RSC, within seven days of report receipt.

If samples have been identified as outstanding, at the laboratory for longer than the turnaround time, then the Lead Chemist must pursue obtaining the data. The Lead Chemist must provide to the RSC a letter which identifies the late data by Case Number, SDG and laboratory. The Lead Chemist must provide within seven working days the date that the data are anticipated or received.

If Cases have been identified which have been in data review for more than 21 days the Lead Chemist must provide to the RSC, within seven working days of report receipt, a letter which identifies by Case Number, SDG, and laboratory the Outstanding Data Validation Memoranda with the scheduled date by which validation will be complete.

4. QA/QC Tracking Report - Bimonthly

The QA/QC Tracking Report lists all the field QC samples assigned to each DAS sampling event. This report is generated bimonthly.

The Lead Chemist verifies that field QC samples are taken at the proper frequency and that the field QC sample numbers are accurate.

If there are discrepancies between the Lead Chemist's records and the report, then the Lead Chemist must provide updated information to the RSC, within seven days of report receipt.

If it is identified that field QC samples were not provided at the proper frequency, the Lead Chemist must submit a letter identifying the data by Case Number, SDG and Laboratory. The letter must define the discrepancy and provide an explanation as to why the frequency requirements were not met.

5. Lab Performance With WMD Comments Report - Bimonthly

The Lab Performance with WMD Comments Report is a summary of comments extracted from the DV memo cover letter and/or the "Data Completeness Worksheet" regarding either the DAS analysis method or problems/deficiencies with the data package. This report is generated bimonthly.

The Lead Chemist verifies that this report identifies cases which require the initiation of corrective action measures with laboratories.

If there are discrepancies between the Lead Chemist's records and the report, then the Lead Chemist must provide updated information to the RSC, within seven days of report receipt.

If there are problems which require follow-up, either in progress or new initiatives, by the Lead Chemist regarding issues in the report, then the Lead Chemist must submit a letter which identifies the data by Case Number, SDG and laboratory to the RSC within seven working days of report receipt describing the actions and the status of these activities.

6. DAS Activity Report - Monthly

The DAS Activity Report lists the matrices and analysis/parameter code requested for each site during a specified time frame. It is generated monthly.

The Lead Chemist verifies that the level and type of DAS activities for each site are reported accurately.

If there are discrepancies between the Lead Chemist's records and the report, then the Lead Chemist must provide updated information to the RSC, within seven days of report receipt.

If Cases have been identified which the data are erroneous or data have not been provided to the RSC then the Lead Chemist must provide all information identified with Case Number, SDG and laboratory to the RSC to make the records complete and/or accurate.

IV. Definitions/Acronyms

CADRE	Computer Aided Data Review and Evaluation
CCS	Contract Compliance Screening
CERCLIS	Comprehensive Environmental Recovery Compensation and Liability Information System
CLASS	Contract Laboratory Analytical Services Support
CLP	Contract Laboratory Program
CLP Client	User of CLP Services
CSF	Complete SDG File
DAS	Delivery of Analytical Services
DAS Client	User of DAS services
DPN	Data Package Number
EPA	U.S. Environmental Protection Agency
ESAT	EPA Region I Environmental Services Assistance Team: Lockheed Engineering and Sciences Corporation
ESD	EPA Region I Environmental Services Division
NESTS	New England Sample Tracking System
OEME	Office of Environmental Measures and Evaluation, formerly Environmental Services Division
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan (or QAPjP)
RAS	Routine Analytical Services
RPO	Regional Project Officer
RSC	Regional Sample Coordinator

RSCC	Regional Sample Control Center
SCC	ESAT Sample Control Coordinator
SDG	CLP Case Sample Delivery Group
SMO	Sample Management Office
SOP	Standard Operating Procedure
SOW	Statement of Work
TPO	Technical Project Officer

Attachment I

EXHIBIT C

TARGET COMPOUND LIST AND CONTRACT REQUIRED QUANTITATION LIMITS

NOTE:

Specific quantitation limits are highly matrix-dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

All CRQLs are rounded to two significant figures.

The CRQL values listed on the following pages are based on the analysis of samples according to the specifications given in Exhibit D.

For soil samples, the moisture content of the samples must be used to adjust the CRQL values appropriately.

Exhibit C -- Section 1
Volatiles (VOA)

1.0 VOLATILES TARGET COMPOUND LIST AND CONTRACT REQUIRED
QUANTITATION LIMITS

Volatiles	CAS Number	Quantitation Limits			
		Water	Low Soil	Med. Soil	On Column
		ug/L	ug/Kg	ug/Kg	(ng)
1. Chloromethane	74-87-3	10	10	1200	(50)
2. Bromomethane	74-83-9	10	10	1200	(50)
3. Vinyl Chloride	75-01-4	10	10	1200	(50)
4. Chloroethane	75-00-3	10	10	1200	(50)
5. Methylene Chloride	75-09-2	10	10	1200	(50)
6. Acetone	67-64-1	10	10	1200	(50)
7. Carbon Disulfide	75-15-0	10	10	1200	(50)
8. 1,1-Dichloroethene	75-35-4	10	10	1200	(50)
9. 1,1-Dichloroethane	75-34-3	10	10	1200	(50)
10. 1,2-Dichloroethene (total)	540-59-0	10	10	1200	(50)
11. Chloroform	67-66-3	10	10	1200	(50)
12. 1,2-Dichloroethane	107-06-2	10	10	1200	(50)
13. 2-Butanone	78-93-3	10	10	1200	(50)
14. 1,1,1-Trichloroethane	71-55-6	10	10	1200	(50)
15. Carbon Tetrachloride	56-23-5	10	10	1200	(50)
16. Bromodichloromethane	75-27-4	10	10	1200	(50)
17. 1,2-Dichloropropane	78-87-5	10	10	1200	(50)
18. cis-1,3-Dichloropropene	10061-01-5	10	10	1200	(50)
19. Trichloroethene	79-01-6	10	10	1200	(50)
20. Dibromochloromethane	124-48-1	10	10	1200	(50)
21. 1,1,2-Trichloroethane	79-00-5	10	10	1200	(50)
22. Benzene	71-43-2	10	10	1200	(50)
23. trans-1,3-Dichloropropene	10061-02-6	10	10	1200	(50)
24. Bromoform	75-25-2	10	10	1200	(50)

Exhibit C -- Section 1
Volatiles (VOA)

Volatiles	CAS Number	Quantitation Limits			
		Water	Low Soil	Med. Soil	On Column
		ug/L	ug/Kg	ug/Kg	(ng)
25. 4-Methyl-2-pentanone	108-10-1	10	10	1200	(50)
26. 2-Hexanone	591-78-6	10	10	1200	(50)
27. Tetrachloroethene	127-18-4	10	10	1200	(50)
28. 1,1,2,2-Tetrachloroethane	79-34-5	10	10	1200	(50)
29. Toluene	108-88-3	10	10	1200	(50)
30. Chlorobenzene	108-90-7	10	10	1200	(50)
31. Ethylbenzene	100-41-4	10	10	1200	(50)
32. Styrene	100-42-5	10	10	1200	(50)
33. Xylenes (total)	1330-20-7	10	10	1200	(50)

2.0 SEMIVOLATILES TARGET COMPOUND LIST AND CONTRACT REQUIRED
QUANTITATION LIMITS

Semivolatiles	CAS Number	Quantitation Limits			
		Water	Low Soil	Med. Soil	On Column
		ug/L	ug/Kg	ug/Kg	(ng)
34. Phenol	108-95-2	10	330	10000	(20)
35. bis-(2-Chloroethyl) ether	111-44-4	10	330	10000	(20)
36. 2-Chlorophenol	95-57-8	10	330	10000	(20)
37. 1,3-Dichlorobenzene	541-73-1	10	330	10000	(20)
38. 1,4-Dichlorobenzene	106-46-7	10	330	10000	(20)
39. 1,2-Dichlorobenzene	95-50-1	10	330	10000	(20)
40. 2-Methylphenol	95-48-7	10	330	10000	(20)
41. 2,2'-oxybis (1-Chloropropane) ¹	108-60-1	10	330	10000	(20)
42. 4-Methylphenol	106-44-5	10	330	10000	(20)
43. N-Nitroso-di-n-propylamine	621-64-7	10	330	10000	(20)
44. Hexachloroethane	67-72-1	10	330	10000	(20)
45. Nitrobenzene	98-95-3	10	330	10000	(20)
46. Isophorone	78-59-1	10	330	10000	(20)
47. 2-Nitrophenol	88-75-5	10	330	10000	(20)
48. 2,4-Dimethylphenol	105-67-9	10	330	10000	(20)
49. bis(2-Chloroethoxy) methane	111-91-1	10	330	10000	(20)
50. 2,4-Dichlorophenol	120-83-2	10	330	10000	(20)
51. 1,2,4-Trichlorobenzene	120-82-1	10	330	10000	(20)
52. Naphthalene	91-20-3	10	330	10000	(20)

¹Previously known by the name bis(2-Chloroisopropyl) ether.

Exhibit C -- Section 2
Semivolatiles (SVOA)

Semivolatiles	CAS Number	Quantitation Limits			
		Water ug/L	Low Soil ug/Kg	Med. Soil ug/Kg	On Column (ng)
53. 4-Chloroaniline	106-47-8	10	330	10000	(20)
54. Hexachlorobutadiene	87-68-3	10	330	10000	(20)
55. 4-Chloro-3-methylphenol	59-50-7	10	330	10000	(20)
56. 2-Methylnaphthalene	91-57-6	10	330	10000	(20)
57. Hexachlorocyclopentadiene	77-47-4	10	330	10000	(20)
58. 2,4,6-Trichlorophenol	88-06-2	10	330	10000	(20)
59. 2,4,5-Trichlorophenol	95-95-4	25	830	25000	(50)
60. 2-Chloronaphthalene	91-58-7	10	330	10000	(20)
61. 2-Nitroaniline	88-74-4	25	830	25000	(50)
62. Dimethylphthalate	131-11-3	10	330	10000	(20)
63. Acenaphthylene	208-96-8	10	330	10000	(20)
64. 2,6-Dinitrotoluene	606-20-2	10	330	10000	(20)
65. 3-Nitroaniline	99-09-2	25	830	25000	(50)
66. Acenaphthene	83-32-9	10	330	10000	(20)
67. 2,4-Dinitrophenol	51-28-5	25	830	25000	(50)
68. 4-Nitrophenol	100-02-7	25	830	25000	(50)
69. Dibenzofuran	132-64-9	10	330	10000	(20)
70. 2,4-Dinitrotoluene	121-14-2	10	330	10000	(20)
71. Diethylphthalate	84-66-2	10	330	10000	(20)
72. 4-Chlorophenylphenyl ether	7005-72-3	10	330	10000	(20)
73. Fluorene	86-73-7	10	330	10000	(20)
74. 4-Nitroaniline	100-01-6	25	830	25000	(50)
75. 4,6-Dinitro-2-methylphenol	534-52-1	25	830	25000	(50)

Exhibit C -- Section 2
Semivolatiles (SVOA)

Semivolatiles	CAS Number	Quantitation Limits			
		Water	Low Soil	Med. Soil	On Column
		ug/L	ug/Kg	ug/Kg	(ng)
76. N-Nitroso- diphenylamine	86-30-6	10	330	10000	(20)
77. 4-Bromophenyl- phenylether	101-55-3	10	330	10000	(20)
78. Hexachlorobenzene	118-74-1	10	330	10000	(20)
79. Pentachlorophenol	87-86-5	25	830	25000	(50)
80. Phenanthrene	85-01-8	10	330	10000	(20)
81. Anthracene	120-12-7	10	330	10000	(20)
82. Carbazole	86-74-8	10	330	10000	(20)
83. Di-n- butylphthalate	84-74-2	10	330	10000	(20)
84. Fluoranthene	206-44-0	10	330	10000	(20)
85. Pyrene	129-00-0	10	330	10000	(20)
86. Butylbenzylphthal ate	85-68-7	10	330	10000	(20)
87. 3,3'- Dichlorobenzidine	91-94-1	10	330	10000	(20)
88. Benzo(a)anthracen e	56-55-3	10	330	10000	(20)
89. Chrysene	218-01-9	10	330	10000	(20)
90. bis(2-Ethylhexyl) phthalate	117-81-7	10	330	10000	(20)
91. Di-n- octylphthalate	117-84-0	10	330	10000	(20)
92. Benzo(b)fluoranth ene	205-99-2	10	330	10000	(20)
93. Benzo(k)fluoranth ene	207-08-9	10	330	10000	(20)

Exhibit C -- Section 2
Semivolatiles (SVOA)

Semivolatiles	CAS Number	Quantitation Limits			
		Water	Low Soil	Med. Soil	On Column
		ug/L	ug/Kg	ug/Kg	(ng)
94. Benzo(a)pyrene	50-32-8	10	330	10000	(20)
95. Indeno(1,2,3-cd)- pyrene	193-39-5	10	330	10000	(20)
96. Dibenzo(a,h)- anthracene	53-70-3	10	330	10000	(20)
97. Benzo(g,h,i)peryl ene	191-24-2	10	330	10000	(20)

Exhibit C -- Section 3
Pesticides/Aroclors (PEST/ARO)

3.0 PESTICIDES/AROCLORS TARGET COMPOUND LIST AND CONTRACT
REQUIRED QUANTITATION LIMITS^{2,3}

Pesticides/Aroclors	CAS Number	Quantitation Limits		
		Water ug/L	Soil ug/Kg	On Column (pg)
98. alpha-BHC	319-84-6	0.050	1.7	5
99. beta-BHC	319-85-7	0.050	1.7	5
100. delta-BHC	319-86-8	0.050	1.7	5
101. gamma-BHC (Lindane)	58-89-9	0.050	1.7	5
102. Heptachlor	76-44-8	0.050	1.7	5
103. Aldrin	309-00-2	0.050	1.7	5
104. Heptachlor epoxide ⁴	111024- 57-3	0.050	1.7	5
105. Endosulfan I	959-98-8	0.050	1.7	5
106. Dieldrin	60-57-1	0.10	3.3	10
107. 4,4'-DDE	72-55-9	0.10	3.3	10
108. Endrin	72-20-8	0.10	3.3	10
109. Endosulfan II	33213-65- 9	0.10	3.3	10
110. 4,4'-DDD	72-54-8	0.10	3.3	10
111. Endosulfan sulfate	1031-07-8	0.10	3.3	10
112. 4,4'-DDT	50-29-3	0.10	3.3	10
113. Methoxychlor	72-43-5	0.50	17	50
114. Endrin ketone	53494-70- 5	0.10	3.3	10
115. Endrin aldehyde	7421-93-4	0.10	3.3	10

²There is no differentiation between the preparation of low and medium soil samples in this method for the analysis of pesticides/Aroclors.

³The lower reporting limit for pesticide instrument blanks shall be one-half the CRQL values for water samples.

⁴Only the exo-epoxy isomer (isomer B) of heptachlor epoxide is reported on the data reporting forms (Exhibit B).

Exhibit C -- Section 3
Pesticides/Aroclors (PEST/ARO)

Pesticides/Aroclors	CAS Number	Quantitation Limits		
		Water ug/L	Soil ug/Kg	On Column (pg)
116. alpha-Chlordane	5103-71-9	0.050	1.7	5
117. gamma-Chlordane	5103-74-2	0.050	1.7	5
118. Toxaphene	8001-35-2	5.0	170	500
119. Aroclor-1016	12674-11-2	1.0	33	100
120. Aroclor-1221	11104-28-2	2.0	67	200
121. Aroclor-1232	11141-16-5	1.0	33	100
122. Aroclor-1242	53469-21-9	1.0	33	100
123. Aroclor-1248	12672-29-6	1.0	33	100
124. Aroclor-1254	11097-69-1	1.0	33	100
125. Aroclor-1260	11096-82-5	1.0	33	100

EXHIBIT C

INORGANIC TARGET ANALYTE LIST

INORGANIC TARGET ANALYTE LIST (TAL) - TABLE 1

Analyte	Contract Required Detection Limit ^{1,2} (ug/L)
Aluminum	200
Antimony	60
Arsenic	10
Barium	200
Beryllium	5
Cadmium	5
Calcium	5000
Chromium	10
Cobalt	50
Copper	25
Iron	100
Lead	3
Magnesium	5000
Manganese	15
Mercury	0.2
Nickel	40
Potassium	5000
Selenium	5
Silver	10
Sodium	5000
Thallium	10
Vanadium	50
Zinc	20
Cyanide	10

- (1) Subject to the restrictions specified in Exhibits D and E, any analytical method specified in ILM04.0, Exhibit D may be utilized as long as the documented instrument or method detection limits meet the Contract Required Detection Limit (CRDL) requirements. Higher detection limits may only be used in the following circumstance:

If the sample concentration exceeds five times the detection limit of the instrument or method in use, the value may be reported even though the instrument or method detection limit may not equal the Contract Required Detection Limit. This is illustrated in the example below:

For lead: Method in use = ICP
Instrument Detection Limit (IDL) = 40
Sample concentration = 220
Contract Required Detection Limit (CRDL) = 3

The value of 220 may be reported even though the instrument detection limit is greater than CRDL. The instrument or method detection limit must be documented as described in Exhibits B and E.

- (2) The CRDLs are the minimum levels of detection acceptable under the contract Statement of Work.

Attachment II

THIRD QUARTER RAS FY95 PROJECTIONS

INORGANIC ANALYSES	April	May	June
35 Day TA Full Metals With Cyanide			
35 Day TA Cyanide Only			
35 Day TA Metals Only			
14 Day TA Full Metals With Cyanide			
14 Day TA Cyanide Only			
14 Day TA Metals Only			
ORGANIC ANALYSES			
35 Day TA Full TCL			
35 Day TA VOA Only			
35 Day TA BNA Only			
35 Day TA Pesticide/PCB Only			
14 Day TA Full TCL			
14 Day TA VOA Only			
14 Day TA BNA Only			
14 Day TA Pesticide/PCB Only			
DIOXIN ANALYSES			
Fast TA 2,3,7,8-TCDD			

THIRD QUARTER DAS FY95 PROJECTIONS

[illegible]

Attachment III